Toxics Use Reduction Institute

Policy Analysis: Recommendation to take no action on certain CERCLA chemicals that have been reported by TURA filers

Statutory amendments to the Toxics Use Reduction Act (TURA) in 2006 required the Science Advisory Board (SAB) and TURI to review the existing chemicals on the TURA Toxic or Hazardous Substance List originating from the CERCLA chemical list and make a recommendation to the Council as to which chemicals should be retained. The Council has until August 1, 2008, to make decisions taking these recommendations into account.

The SAB has considered the CERCLA chemicals in two broad groups: chemicals that have been reported at some point by TURA filers, and chemicals that have never been reported by TURA filers. This document presents information on those chemicals that:

- Have been reported by TURA filers (or are chemically very similar to those that have been reported), and
- Are recommended for "no action."

To date, the SAB has recommended "no action" on 19 CERCLA substances. Those substances for which the Council takes no action will be delisted under TURA, effective January 1, 2009. The SAB has also made a preliminary "no action" recommendation on another 13 substances, and will be revisiting the scientific information on these substances later. This document presents information on all 32 of these substances.

This policy analysis presents the scientific information reviewed by the Science Advisory Board in developing its recommendations. In addition, it summarizes information on the most recent year in which the substance was reported, the number of filers that reported use of the substance in the most recent reporting year, and regulations that apply to these substances at the state, federal, and international levels.

Based on the information presented here, TURI supports the SAB's recommendations to take no action on the 19 substances for which the SAB recommendation is final.

1. Substances recommended for no action or still under consideration

Appendix A is a list of 19 substances recommended for no action on the TURA list, as well as another 13 substances that are still under consideration by the SAB.

2. Basis for SAB recommendations

The discussion below provides an overview of the information considered by the SAB. Points discussed by the SAB for each substance are summarized briefly in Appendix A, and the specific data for each substance are shown in Appendix C. In addition to the data shown in Appendix C, in many instances individual SAB members brought additional scientific information to the meeting.

In general, if there was any reason to retain a substance on the list, the SAB recommended retaining it. Thus, the substances recommended for no action are those for which the SAB saw no particular basis to retain.

In reviewing the substances, the SAB considered the following data:

- International Agency for Research on Cancer (IARC) rating.

    - The SAB recommended retaining any substance that has an IARC rating (Group 1, 2, or 3). Thus, of the substances recommended for no action, none has an IARC rating.

- Data from the EPA PBT profiler (persistence in water, soil, sediment, and air; bioconcentration factor; and chronic toxicity in fish).[1]

    - A number of the substances recommended for no action cannot be profiled on the EPA PBT profiler. Of those able to be profiled and recommended for no action, a number have high persistence in air. The SAB considered persistence in air to be less of a concern than persistence in other media.

- Neurotoxicity (based on Scorecard's list of neurotoxicants, and other sources in some cases).[2]

    - Of the substances recommended for no action, none are identified as neurotoxicants.

- Developmental/reproductive toxicity (based on California's Proposition 65 list, and other sources in some cases).[3]

    - Of the substances recommended for no action, none is listed as a developmental or reproductive toxicant on California's Proposition 65 list. For two substances (aluminum sulfate and di-n-octyl phthalate), a search of government databases indicated that there is some basis for concern about reproductive or developmental toxicity.

- Mutagenicity (based on the European Union's Consolidated List of Carcinogens, Mutagens, and Reproductive Toxicants [CMR], and other sources in some cases).[4]

    - Of the substances recommended for no action, none appears on the EU CMR list. For two substances (aluminum sulfate and nitric oxide), a search of government databases indicated that some studies have found evidence of mutagenicity.

- Lethal dose or concentration information (LD50 and LC50). In general, the LD50 and LC50 for the substances recommended for no action are relatively high, indicating relatively low toxicity.

- Exposure limits required or recommended by Federal agencies
    - Reference dose and reference concentration (RfD and RfC, from EPA Integrated Risk Information System).[5] The reference dose and reference concentration values for the substances recommended for no action indicate relatively low toxicity. For some substances, these values are not available.

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[1] EPA PBT Profiler, available at http://www.epa.gov/oppt/sf/tools/pbtprofiler.htm.
[2] Scorecard's list of suspected neurotoxicants, and the sources used to compile the list, is available at http://www.scorecard.org/health-effects/ (select the link for neurotoxicity).
[3] The California Proposition 65 List is available at http://www.oehha.org/prop65/prop65_list/Newlist.html. Additional information is drawn from the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and the New Jersey Department of Health and Senior Services Hazardous Substances Fact Sheet for di-n-octyl phthalate (http://nj.gov/health/eoh/rtkweb/documents/fs/0787.pdf).
[4] The EU Consolidated CMR List is available at http: //www.chemicalspolicy.org/downloads/cmrlist.pdf. Additional information is drawn from the US National Library of Medicine Toxicology Data Network (TOXNET).
[5] EPA Integrated Risk Information System, available at http://www.epa.gov/iris/.

- NIOSH Recommended Exposure Limit (REL); Threshold Limit Value – Time Weighted Average (TLV-TWA); and Threshold Limit Value – Short Term Exposure Limit (TLV-STEL).[6] For several of the substances, these values indicate moderate toxicity.

- Flash point. For those substances on the list that have a flash point, the values are intermediate to high, indicating that flash point is not a major concern for any of these substances.

3. Use Information

As shown in Appendix B, the majority of the substances recommended for no action have been reported by TURA filers within the last three years for which data are available (2003 to 2005). A few of the substances have not been reported in recent years, or have never been reported. The number of filers for a given substance in the most recent reporting year ranges from one to eleven.

4. Regulatory Context

Appendix B shows selected regulatory information for each of the substances recommended for no action.

- One of the substances, di-n-octyl phthalate, is identified as an EPA Clean Water Act Priority Pollutant. All but three of the substances are identified on the EPA Clean Water Act 311 List of Hazardous Substances.
- Two of the substances (nitric oxide and di-n-octyl phthalate) are found on the EPA Superfund Amendments and Reauthorization Act (SARA) 302A Extremely Hazardous Substances List.
- Two of the substances (nitric oxide and ethanol,2,2-oxybis,dicarbamate) are listed as hazardous constituents under the Resource Conservation and Recovery Act (RCRA).
- None of the substances have maximum contaminant levels (MCLs) under the Safe Drinking Water Act. None are regulated as criteria air pollutants under the Clean Air Act. None of the substances are listed as hazardous air pollutants under the Clean Air Act.
- The majority of the substances are on the New Jersey Right-to-Know list. All but one are on the Pennsylvania Hazardous Substances list.
- Seven of the substances meet the categorization criteria for the Government of Canada's Domestic Substances List categorization, indicating that there is a need for further attention to these substances based on human health and/or environmental criteria. These are: ammonium bicarbonate; ferrous ammonium sulfate (anhydrous); aluminum sulfate; butyric acid; isobutyl acetate; ammonium chloride; and ammonium sulfamate.

5. Implications for the TURA Program

The result of taking no action on these substances will be that they will be removed from Toxic and Hazardous Substance List as of January 1, 2009. This means that TURA-covered facilities will no longer be required to report, pay a fee, and do toxics use reduction planning as a result of using these substances. Removing these substances from the TURA list helps the program to focus its efforts more closely on substances that present more significant hazards to human health and the environment in Massachusetts.

According to the 2005 TURA data, there were filers for 18 of the 34 substances that are designated for "no action," or that the SAB plans to revisit. There were a total of 69 Form S's for these 18 chemicals. Thus, an

[6] REL, TLV-TWA, and TLV-STEL are drawn from the National Institutes of Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards, available at http://www.cdc.gov/niosh/npg/.

expected 69 facilities will save $1,100 per year in annual fees. These facilities will still have access to TURA program resources, and may choose to work with the TURA program to seek other financial savings through toxics use reduction. Only one facility will drop out of the program completely.

The total reduction in fees for these 69 Form S's is $75,900 ($1,100 per Form S). The single facility that will drop out of the program completely will also stop paying an annual base fee of $1,850. Thus, the total expected reduction in toxics use fees across all affected filers is expected to be $77,750.

Appendix A: CERCLA substances recommended for no action or on agenda for further discussion				
CAS#	**Chemical Name**	**Synonym**	**Date(s) Considered by SAB**	**Justification** Note: Unless otherwise noted, votes were unanimous.
1066-33-7	Ammonium bicarbonate		7/16/2007	No important concerns identified.
7705-08-0	Ferric chloride	Iron chloride hexahydrate	3/20/07; 4/23/2007; 7/16/07	Principal issue is worker exposure; deemed not significant.
10028-22-5	Ferric sulfate			Principal issue is worker exposure; deemed not significant.
10045-89-3	Ferrous ammonium sulfate (anhydrous)			Principal issue is worker exposure; deemed not significant.
7758-94-3	Ferrous Chloride			Principal issue is worker exposure; deemed not significant.
7720-78-7	Ferrous sulfate			Principal issue is worker exposure; deemed not significant.
7782-63-0	Ferrous sulfate	Iron Sulfate Heptahydrate		Principal issue is worker exposure; deemed not significant.
7558-79-4	Sodium phosphate, dibasic	anhydrous	3/20/07; 7/16/2007	On agenda for further discussion on 3/18/08
10039-32-4	Sodium phosphate, dibasic	dodecahydrate		On agenda for further discussion on 3/18/08
10140-65-5	Sodium phosphate, dibasic			On agenda for further discussion on 3/18/08
7601-54-9	Sodium phosphate, tribasic	Anhydrous		On agenda for further discussion on 3/18/08
7758-29-4	Sodium phosphate, tribasic	Sodium tripolyphosphate		On agenda for further discussion on 3/18/08
7785-84-4	Sodium phosphate, tribasic	Metaphosphoric acid trisodium salt		On agenda for further discussion on 3/18/08
10101-89-0	Sodium phosphate, tribasic	Dodecahydrate		On agenda for further discussion on 3/18/08
10124-56-8	Sodium phosphate, tribasic	Sodium Hexametaphosphate		On agenda for further discussion on 3/18/08
10361-89-4	Sodium phosphate, tribasic	Phosphoric acid, trisodium salt, decahydrate		On agenda for further discussion on 3/18/08
10043-01-3	Aluminum sulfate	Alum	12/19/2007	Compared to ferrous and ferric sulfate. Mild irritant.
10102-43-9	Nitric oxide	NO	12/19/2007	Transient existence. 5 voted to take no action, 2 opposed, 1 abstaining.
107-92-6	Butyric acid		10/17/2007	Nuisance smell and persistent in air.

110-16-7	Maleic acid		6/25/07; 10/17/2007	No important concerns identified.
110-17-8	Fumaric acid		10/17/2007	Food additive.
110-19-0	iso-Butyl acetate		10/17/2007	The flammability and flash point were discussed for iso-butyl acetate. Flash point is 64°F and it has a low vapor pressure. On agenda for further discussion on 3/18/08
117-84-0	Di-n-octyl phthalate		6/25/07; 10/17/07; 12/19/2007	This chemical is often confused with other more harmful phthalates, such as DEHP. Data shows that it doesn't bind with estrogen receptors.
12125-02-9	Ammonium chloride		10/17/2007	Ammonium chloride is found in shampoo, adhesives, candies, and anti-perspirants. Ammonium chloride is an upper respiratory tract irritant. Persistence in air is 180. TLV is nuisance dust standard.
123-86-4	Butyl acetate		10/17/2007	The flammability and flash point were discussed for butyl acetate. The flash point is 72°F. The vapor pressure is low. On agenda for further discussion on 3/18/08
124-04-9	Adipic acid		6/25/07; 10/17/2007	Chronic fish toxicity and RfD are high. ScoreCard ranked this chemical in the lowest percentile. TLV 5mg – same as nuisance dust. It is used in plasticizers and is also a food ingredient in jelly.
124-41-4	Sodium methylate		10/17/2007	Sodium Methylate is persistent in air.
540-88-5	tert-Butyl acetate		10/17/2007	The flammability and flash point were discussed for tert butyl acetate. The flash point is 72°F. The vapor pressure is low. On agenda for further discussion on 3/18/08
5952-26-1	Ethanol,2,2-oxybis,dicarbamate (diethylene glycol,dicarbamate)		6/25/07; 12/19/2007	This chemical has a high persistence in sediment. LD50 is very high.
628-63-7	Amyl acetate		12/19/2007	Amyl acetate is used for fit testing respirators. It has a high explosion limit (100 ppm), is an eye irritant, and is persistent in air. 5 votes to take no action, 2 abstaining. On agenda for further discussion on 3/18/08
7773-06-0	Ammonium sulfamate		12/19/2007	Ammonium sulfamate is a nuisance dust issue.
7681-49-4	Sodium fluoride		6/4/07; 6/25/07; 7/16/2007	For sodium fluoride, it was noted that two 2-year studies showed it was negative for carcinogenicity but also showed reproductive effects. It has been approved for use in toothpaste, and is regulated by EPA as a pesticide and insecticide. About 30 to 40 drinking water systems in the state use it for fluoridating water.

Appendix B - Additional information on substances recommended for no action

Cas #	Chemical Name	Synonym	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
1066-33-7	Ammonium bicarbonate		2005	2	-	Y	-	N	-	Y	Y	Y
7705-08-0	Ferric chloride	Iron chloride hexahydrate	2005	10	-	Y	-	N	-	Y	Y	N
10028-22-5	Ferric sulfate		2005	2	-	Y	-	N	-	Y	Y	N
10045-89-3	Ferrous ammonium sulfate (anhydrous)		n/r	n/r	-	Y	-	N	-	Y	Y	Y
7758-94-3	Ferrous Chloride		2005	1	-	Y	-	N	-	Y	Y	N
7720-78-7	Ferrous sulfate		2004	1	-	Y	-	N	-	Y	Y	N
7782-63-0	Ferrous sulfate	Iron Sulfate Heptahydrate	2005	1	-	Y	-	N	-	N	Y	n/f
7558-79-4	Sodium phosphate, dibasic	anhydrous	2005	2	-	Y	-	N	-	Y	Y	N
10039-32-4	Sodium phosphate, dibasic	dodecahydrate	n/r	n/r	-	Y	-	N	-	N	Y	n/f
10140-65-5	Sodium phosphate, dibasic		n/r	n/r	-	Y	-	N	-	N	Y	n/f
7601-54-9	Sodium phosphate, tribasic	Anhydrous	2005	1	-	Y	-	N	-	Y	Y	N
7758-29-4	Sodium phosphate, tribasic	Sodium tripolyphosphate	2005	5	-	Y	-	N	-	N	Y	N
7785-84-4	Sodium phosphate, tribasic	Metaphosphoric acid trisodium salt	n/r	n/r	-	Y	-	N	-	N	Y	N
10101-89-0	Sodium phosphate, tribasic	Dodecahydrate	2005	2	-	Y	-	N	-	N	Y	n/f
10124-56-8	Sodium phosphate, tribasic	Sodium Hexametaphosphate	1996	1	-	Y	-	N	-	N	Y	N
10361-89-4	Sodium phosphate, tribasic	Phosphoric acid, trisodium salt,	n/r	n/r	-	Y	-	N	-	N	Y	n/f

Key: Y = found on list; N = does not meet criteria; - = not found on list or in database

Cas #	Chemical Name	Synonym	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
10043-01-3	Aluminum sulfate	Alum	2005	8	-	Y	-	N	-	Y	Y	Y
10102-43-9	Nitric oxide	NO	2002	1	-	-	Y	Y	-	Y	Y	N
107-92-6	Butyric acid		1997	1	-	Y	-	N	-	Y	Y	Y
110-16-7	Maleic acid		2005	1	-	Y	-	N	-	Y	Y	N
110-17-8	Fumaric acid		2005	1	-	Y	-	N	-	Y	Y	N
110-19-0	iso-Butyl acetate		2005	4	-	Y	-	N	-	Y	Y	Y
117-84-0	Di-n-octyl phthalate		2000	1	Y	-	Y	N	-	Y	Y	N
12125-02-9	Ammonium chloride		2005	3	-	Y	-	N	-	Y	Y	Y
123-86-4	Butyl acetate		2005	11	-	Y	-	N	-	Y	Y	N
124-04-9	Adipic acid		2005	5	-	Y	-	N	-	Y	Y	N
124-41-4	Sodium methylate		2003	1	-	Y	-	N	-	Y	Y	N
540-88-5	tert-Butyl acetate		1992	1	-	Y	-	N	-	Y	Y	N
5952-26-1	Ethanol,2,2-oxybis,dicarbamate (diethylene glycol,dicarbamate)		1996	1	-	-	-	Y	Y	n/f	n/f	n/f
628-63-7	Amyl acetate		2005	2	-	Y	-	N	-	Y	Y	N
7773-06-0	Ammonium sulfamate		2005	8	-	Y	-	N	-	Y	Y	Y
7681-49-4	Sodium fluoride		2004	1	-	Y	-	N	-	Y	Y	N

Key: Y = found on list; N = does not meet criteria; - = not found on list or in database;; n/r = not reported